ENTOMOLOGY.—*New American chinch bugs (Hemiptera: Lygaeidae).* Carl J. Drake, Iowa State College.

The members of the genera *Blissus* Klug, *Neoblissus* Bergroth, and *Parablissus* Barber are commonly called chinch bugs. So far as known they are entirely grass-feeding insects. Several of the species are serious pests of grasses, small grain, and corn. *Blissus leucopterus* (Say) of North America ranks very high among the most injurious insect pests of corn and small grain, particularly in the States of the Midwest where corn and small grain are extensively cultivated. Grasses in United States, West Indies, and Central America are attacked by four or five different kinds of chinch bugs. Serious outbreaks of *Blissus* occur at irregular intervals, depending largely upon weather conditions.

The present paper contains the descriptions of two new species of *Blissus*, one new *Neoblissus*, and notes on several other species. The genera *Neoblissus* and *Parablissus* are peculiar to the Americas, whereas *Blissus* is represented in most of the major land divisions of the world. So far as known the species of *Neoblissus* are myrmecophilous, feeding and breeding on grasses growing inside of chambers of the nests of the vicious ant *Solenopsis saevissima* Sm. *N. weiseri*, a new species described herein, also inhabits the nests of the same species of ant in Argentina. Both species live as guests in the nest and receive no apparent care from their host. The bugs are free to wander about in the chambers, or even to leave the nests. The nymphs are not known to occur outside of the nests.

The species of *Neoblissus* are widely distributed and fairly common in ant nests; more than 1,000 nymphs and imagoes have been collected in a single nest. Nymphs of all stages and adults are found in large numbers in the nests during the growing period, whereas adults are most abundant late in summer and in winter. The adults overwinter in large numbers in the lower chambers of the nests. The late Dr. Carlos Bruch (*loc. cit.*) of La Plata has published an interesting account of *Neoblissus* in the nests of *Solenopsis saevissima*.

Unless otherwise stated, the types of the new species are in my personal collection.

Apterous and macropterous forms of two chinch bugs, *Blissus mixus* Barber (Fig. 2) and *B. iowensis* Andre (Fig. 1) are illustrated. The latter is found on the crown of bluestem grasses, often slightly below the surface of the ground.

Blissus hirtus Montandon

Blissus hirtus Montandon, Ann. Soc. Ent. Belg. **37**: 405. 1893.

In Montandon's collection there are no examples of this chinch bug from the type locality, Hazleton, Pa., M. Dietz. However, his collection contains two specimens of this insect from "*Canada, L. Provancher,*" which are as hairy as typical *hirtus*. Specialists in Hemiptera are not fully in accord regarding the status of *B. hirtus* Montandon. Some workers consider it as a longly hairy variety of *B. leucopterus* (Say), whereas others treat it on the species level. It is at least a good geographic race or subspecies and not nearly so widely disseminated as typical *B. leucopterus*. At irregular intervals *B. hirtus* is a serious pest of grasses in lawns and golf courses in the northern States from Minnesota east clear across Pennsylvania and New York, and then north deep into Canada.

Blissus pulchellus Montandon

Blissus pulchellus Montandon, Ann. Soc. Ent. Belg. **37**: 405. 1893.

The type series of *B. pulchellus* in Montandon's collection contains only two specimens, each carded on a separate rectangular card and mounted on separate pins. The first pin bears (1) carded brachypterous female, (2) locality label "Costa Rica, Buenos Aires, A. Pittier," and (3) species label "*Blissus pulchellus* Montd." in Montandon's own handwriting. The other pin bears (1) a carded long-winged female and (2) the same locality label and collector. It seems that Buenos Aires is the name of a small village in Costa Rica. The apterous female is designated here as the type and the other female as a paratype. Both specimens are in fairly good condition and deposited in the Muzeul National de Istoria Naturala "grigori antipa," Bucuresti. The following notes are based on the brachypterous type.

Short-winged female: Length, 2.75 mm; width, 0.88 mm. Head black, slightly pruinose, with some short, pale, decumbent hairs; width across eyes, 0.60 mm; wider across eyes than median length (48:42). Antennae moderately long, shortly pilose, yellowish brown with apical segment dark fuscous; formula—I, 12; II, 25; III, 21; IV, 35. Pronotum black with pruinose in front, nearly flat above, almost rectangular in outline with sides becoming a little narrower anteriorly and more rounded on front corners, wider at base than median length (68:43). Abbreviated hemelytra almost attaining middle of abdomen, whitish with dark fuscous patch beyond middle, rather broadly rounded at apex, the veins with some erect pale hairs; membrane short, pale. Scutelum black. Abdomen above brownish, beneath bluish black. Legs yellowish brown, clothed with short pale hairs.

In the alate paratype the hemelytra do not quite reach to the apex of the abdomen, leaving most of the connexiva exposed. Length 2.90 mm.

Specimens of *B. pulchellus* from La Ceiba, Honduras, taken on *Panicum*, by F. S. Dyer, U. S. National Museum, agree very closely with the type and have been labeled by Dr. R. I. Sailer and the writer as "*comp. with type.*" Others in the National Museum were taken on the roots of *Panicum purpurea*, Los Sabanas, Panama, James Zetek.

Blissus brasiliensis, n. sp. Fig. 3

Elongate, rather densely longly pilose, moderately shaggy, blackish, with abdomen reddish brown, the head, anterior part of pronotum and abdomen beneath bluish. Head a little wider across eyes than median length (56:45), with pale hairs more or less erect; tylus fuliginous; eyes small, reddish, with a few short hairs. Antennae moderately long, rather densely shortly pilose, yellowish brown with the terminal segment (also sometimes third and apex of second) dark fuscous; formula—I, 10; II, 22; III, 30; IV, 37. Rostrum testaceous, extending between middle coxae. Venter reddish brown, bluish.

Macropterous form: Pronotum subquadrate, slightly narrowed anteriorly, widest across humeral angles, anterior pruinose part finely punctate: hind part black, punctate, width at base much wider than median length (95:65). Abdomen almost parallel-sided. Hemelytra not quite reaching apex of abdomen, whitish, the apical angle of corium black-fuscous. Length, 3.60 mm; width, 1.00 mm.

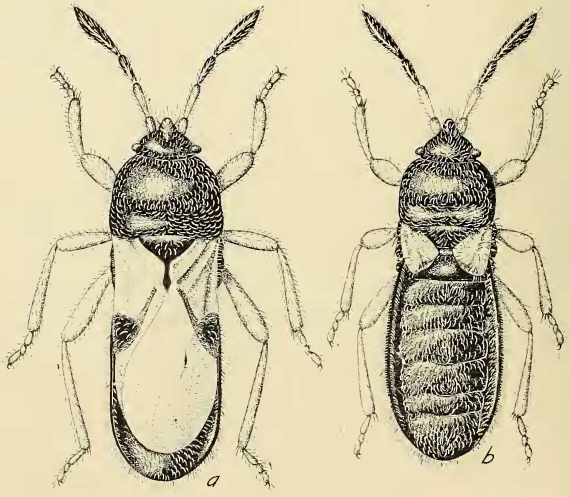

FIG. 1.—*Blissus iowensis* Andre: *a*, Macropterous form; *b*, brachypterous form.

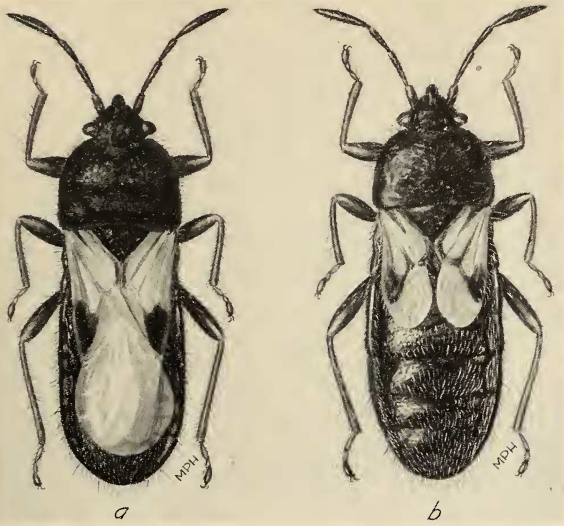

Fig. 2.—*Blissus mixus* Barber: *a*, Macropterous form; *b*, brachypterous form.

Brachypterous form: Abbreviated hemelytra about three-fifths as long as abdomen, whitish with dark patch a little smaller than in long-winged form. Entire insect also smaller than macropterous form. Length, 3.00 mm.

Type, macropterous male and *paratype* brachypterous male, Corumba, Brazil. *Allotype*, macropterous female, Santarém, Brazil.

The much shorter antennae separate this species at once from *M. penningtoni* Drake, and it is distinctly smaller with much longer pubescence or short hairs than *B. richardsoni* Drake.

Blissus yumana, n. sp.

Elongate, black, moderately shaggy, the abdomen reddish brown; hairs whitish, erect or partly decumbent; head, anterior half of pronotum and abdomen beneath bluish. Head wider through eyes than median length (60:60), the tylus brownish. Antennae long, longly pilose, testaceous, the fourth and sometimes the fifth segment dark fuscous; formula—I, 20; II, 40; III, 32; IV, 52. Rostrum testaceous, extending between hind coxae. Legs testaceous, clothed with short pale hairs. Pronotum much wider than long (100:62), finely punctate, the sides with front corners more rounded; hind lobe considerably flattened.

Macropterous form: Hemelytra not quite attaining apex of abdomen, the dark fuscous spot in apical angle of corium extending a little into membrane; membrane with veins distinct. Length, 4.40 mm; width, 1.24 mm.

Brachypterous form: Hemelytra about three-fifths as long as the abdomen, with dark spot in apical angle of corium about the same size as in long-winged form; membrane short, subtransparent, narrowly rounded apically. Length, 4.20 mm.

Type (macropterous male), *allotype* (brachypterous female), and 6 *paratypes*, Yuma, Ariz., E. D. Ball.

The longer antennae and longer body separate this species at once from *B. leucopterus* and other North American members of the genus.

Blissus richardsoni Drake

Blissus richardsoni Drake, Notas Mus. La Plata **5**: 224, fig. 1. 1940.

Described from a single specimen, collected

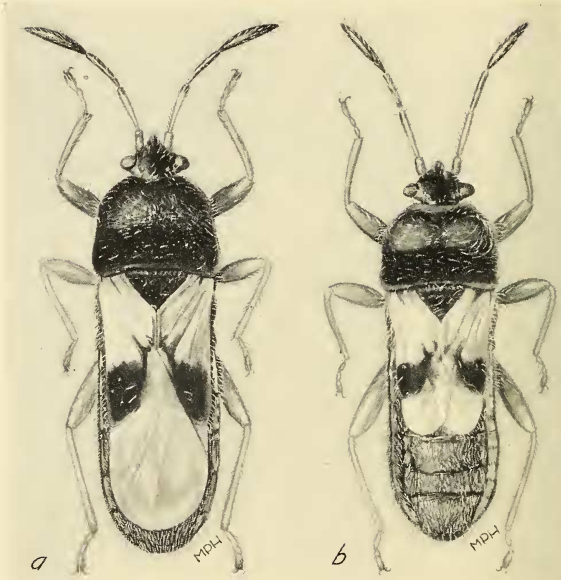

FIG. 3.—*Blissus brasiliensis*, n.sp.: *a*, Macropterous form; *b*, brachypterous form.

near Buenos Aires, Argentina. The larger and more robust size and clothing of very short hairs separate this insect at once from other Brazilian and Argentine species. The fourth antennal segment is also much longer and stouter. In addition to the type, there are two females (long- and short-winged) from Chapada, Brazil. The brachypterous form is shorter than the macropterous, and the abbreviated wings do not quite reach the middle of the abdomen. The short hemelytra are moderately long, obliquely rounded at apices, reaching almost to the apex of third visible tergite, whitish testaceous on basal half, thence dark fuscous; membrane is short, fumose; veins are moderately prominent. The pronotum is considerably flattened. Antennal formula: I, 12; II, 32; III, 26; IV, 60. The eyes bear a few short hairs.

Neoblissus hygrobius (Jensen-Haarup)

Mendocina hygrobia Jensen-Haarup, Ent. Medd. **13:** 210, fig. 1. 1920.

This chinch bug was described from a brachypterous male, taken in the Province of Mendoza, Argentina, by A. C. Jensen-Haarup, who wrongly treated it as a member of the "shore bug" family Aeophilidae and thus found it necessary to erect a new genus for its reception. A study of the description and figures shows that *hygrobia* belongs to either the genus *Blissus* or *Neoblissus* of the family Lygaeidae. At the moment it seems advisable to synonymize the genus *Mendocina* Jensen-Haarup with *Neoblissus* Bergroth.

N. hygrobius (Jensen-Haarup) is very similar and closely related to *N. parasigaster* Bergroth. An examination of the type of the former may prove that the two names apply to the same species. Size, shape, length of brachypterous wing pads, and color seem to be identical. There may be a little difference in the antennal formula. However, it will be necessary to examine the type of *N. hygrobius* to establish its true specific status.

The genus *Neoblissus* Bergroth was erected for the reception of a myrmecophilous chinch bug found feeding and breeding in the nests of ants (*Solenopsis saevissima*) in Brazil. The genus is very closely allied to the genus *Blissus* and is distinguished largely by the very short wing pads with wide and subtruncate apex in the brachypterous form. So far as known the species of *Neoblissus* feed and breed on grasses grown in the chambers in the nests of ants. Until more is known about myrmecophilous chinch bugs, it seems best to leave *Neoblissus* stand as a valid genus. Another species of chinch bug found inhabiting ant nests in Argentina is described below as new to science.

Neoblissus parasigaster Bergroth

Neoblissus parasigaster Bergroth, Entom. Zeit. Wien **23:** 253. 1903.
Neoblissus parasigaster Bruch, Physis **3:** 146. 1917.
Neoblissus parasigaster Bruch, Physis **4:** 53. 1918.
Neoblissus parasigaster Drake, Notas Mus. La Plata **5:** 226, fig. 3. 1940.

In the macropterous form the hemelytra are whitish, with apical angle of corium blackish fuscous, and do not reach the apex of the abdomen. The dark fuscous patch varies in size, sometimes including as much as one-half of the corium. It is widely distributed in Argentina and Brazil, where it lives as a guest in large numbers (both nymphs and adults) in the underground chambers of vicious ant nests (*Solenopsis saevissima*).

It feeds and breeds on the grasses growing on the inside of the chambers and hibernates during winter in the lower chambers. It is apparently undisturbed by the ants and is free to move in the cavities and to leave the nest. Bruch reports finding more than 1,000 chinch bugs in a single nest. The nymphs (all stages) are extremely abundant during summer, the adults during the winter months. Dr. Bruch's preliminary (*loc. cit*) account of the relationship is very interesting, and it is unfortunate that he was never able to complete his studies.

Neoblissus weiseri, n. sp.

Brachypterous form: Moderately large, moderately shaggy, head and pronotum brownish black to black; abdomen reddish brown; hairy clothing moderately long fine, dense, whitish testaceous. Legs yellowish brown, clothed with short pale hairs. Antennae moderately long, shortly pilose, the terminal segment often dark; formula—I, 12; II, 25; III, 20; IV, 40. Head across eyes and median length almost subequal; tylus brownish. Rostrum testaceous, its tip reaching to base of abdomen. Orifice brownish, with large canal. Scutellum brownish to black, twice as wide as long, punctate. Hemelytral pads short, reaching on the outside to hind margin of third visible tergite; posterior margin subtruncate, very strongly oblique (or feebly rounded), within being whitish, dark in apical corner or corium, with veins brownish; veins testaceous or brownish and hairy.

Pronotum finely punctate, much wider than long (92:52), with sides becoming slightly narrower anteriorly and more rounded at anterocorners. Abdomen moderately shaggy, clothed with pale hairs, beneath being reddish brown to black, moderately hairy. Length, 3.20 mm.; width, 1.25 mm.

Macropterous form: Hemelytra variable in length, generally a little shorter than abdomen, sometimes considerably shorter leaving the last two tergites exposed; apex of corium with blackish spot. Length, 3.00–3.15 mm.; width, 1.25 mm.

Type (male) and *allotype* (female), both brachypterous, Province of Entre Ríos, Fives Lille, Santa Fé, Argentina, taken by Weiser, in La Plata Museum, Argentina. Paratypes, apterous and macropterous forms, taken with types, in the nests of the vicious and almost vicious omnivorous ants, *Solenopsis saevissima*.

Easily distinguished from *B. parasigaster* Bergroth by its smaller size and shorter antennae; and the hemelytral pads are slightly and obliquely truncate apically. The wing-pads of *B. parasigaster* are shorter and feebly obliquely truncate and very wide at apex.